

JOURNAL OF PHYSICAL AND CHEMICAL REFERENCE DATA

CODEN: JPCRBV
ISSN: 0047-2689
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Volume 32, No. 2, 2003

Thermodynamics of Chlorinated Phenols, Polychlorinated Dibenzo-*p*-Dioxins, Polychlorinated Dibenzofurans, Derived Radicals, and Intermediate Species 443

Alexander Burcat, Lavrent Khachatryan, and Barry L. Dellinger

The thermodynamics of 31 chlorinated phenols, polychlorinated dibenzo-*p*-dioxins, polychlorinated dibenzofurans and some chlorinated cyclo-C₅-compounds have been calculated. Additionally the thermodynamic properties of temperature dependent tables of the ideal gas phase thermodynamic properties are listed, together with recommended values for the structure, vibrational frequencies, and the enthalpy of formation.

Enthalpies of Vaporization of Organic and Organometallic Compounds, 1880–2002 519

James S. Chickos and William E. Acree, Jr.

A compendium of vaporization enthalpies, published within the period 1880–2002 (over 1,900 references), is reported. A brief review of temperature adjustments for the vaporization enthalpies from the temperature of measurement to the standard reference temperature, 298.15 K, is included, as are recently suggested values for several reference materials. Vaporization enthalpies are included for organic organometallic, and a few inorganic compounds.

NIST-JANAF Thermochemical Tables. II. Three Molecules Related to Atmospheric Chemistry: HNO₃, H₂SO₄, and H₂O₂ 879

Olga V. Dorofeeva, Vladimir S. Iorish, Vladimir P. Novikov, and David B. Neumann

The structural, spectroscopic and thermochemical properties of three polyatomic molecules with internal rotation—HNO₃(g), H₂SO₄(g), and H₂O₂(g)—have been reviewed. Three revised ideal gas thermodynamic tables result from this critical examination. The revisions involved the consideration of new spectroscopic information and the use of theoretical results to model the internal rotation in the H₂SO₄ molecule.

Henry's Constants and Vapor–Liquid Distribution Constants for Gaseous Solutes in H₂O and D₂O at High Temperatures 903

Roberto Fernández-Prini, Jorge Alvarez, and Allan H. Harvey

We have developed correlations for the Henry's constants k_H and the vapor–liquid distribution constants K_D for 14 solutes in H₂O and seven solutes in D₂O. Solubility data from the literature were critically assessed and reduced to the appropriate thermodynamic quantities, making use of corrections for nonideality in the vapor and liquid phases as best they could be computed. While the correlations presented here cover the entire range of temperatures from near the freezing point of the solvent to high temperatures approaching the critical point, the main emphasis is on representation of the high-temperature behavior.

Erratum: "Doppler Broadening and its Contribution to Compton Energy-Absorption Cross Sections: An Analysis of the Compton Component in Terms of Mass-Energy Absorption Coefficient" [J. Phys. Chem. Ref. Data 31, 769 (2002)] 917

D. V. Rao, T. Takeda, Y. Itai, T. Akatsuka, R. Cesareo, A. Brunetti, and G. E. Gigante

Erratum: "Atomic Weights of the Elements 1999" [J. Phys. Chem. Ref. Data 30, 701 (2001)] 919

T. B. Coplen